

Recovery Plan Action Status**Plan Name: Recovery Plan for the Big Island Plant Cluster****Plan Status: Final****Plan Date: 26-Sep-96****Lead Agency: USFWS****Lead Office: Pacific Islands Fish And Wildlife Office****(808)
792-9400)**

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
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`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	111	Locate, verify and delineate all extant wild populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service	Research: Population Surveys	Contract, Internal Field Assistance, Species Expert	This is an ongoing action, as the status of the species and their threats change constantly. NOTE: For all tasks in this recovery plan, only the 22 species in the first Big Island plan are being addressed. The other 13 are addressed in the Big Island addendum.

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<p>‘Oha wai (Clermontia peleana), Po’e (Portulaca sclerocarpa), Haha (Cyanea shipmanii), Kuahiwi laukahi (Plantago hawaiiensis), Lo’ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), ‘Oha wai (Clermontia pyralaria), ‘Aiea (Nothocestrum breviflorum), Ha’iwale (Cyrtandra giffardii), A’e (Zanthoxylum hawaiiense), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis)</p>	1	1131	Continue and enhance protection on Federal lands	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Department of Defense, National Park Service, U.S. Fish and Wildlife Service, Law Enforcement Division, U.S. Fish and Wildlife Service, Refuge Division	Acquisition, Acquisition: Management Agreement, Management: Habitat Maintenance and Manipulation	Contract, Graduate Student, Internal Administrative, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	While complete for Hakalau NWR and Hawaii Volcanoes National Park, this task is still largely in the planning stages for DOD lands.

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<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyricularia), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	121	Develop management plans for each management unit	Partially Complete	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, U.S. Fish and Wildlife Service, Refuge Division, Ola‘a Kilauea Management Group	Management: Planning	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	OKMG and NPS have strategic plans, DOD is in the process of developing one for Pohakuloa Training Area, NWR is in the process of developing one for Hakalau, and DLNR is in the process of developing one for Puu Waawaa.

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<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrrularia), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	12211	Construct and maintain fencing	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, U.S. Fish and Wildlife Service, Refuge Division, Ola‘a Kilauea Management Group	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	<p>This task is ongoing for OKMG, NWR, NPS, DOD, and DLNR. Additional fencing is planned for all of these lands. However, there are still areas of suitable habitat needed for recovery that are not fenced or planned.</p>

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`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrrularia), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	12212	Evaluate alternative means for control of ungulates	Complete	FY 1995 - FY 1999	FY 2000 - FY 2004	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	Studies on the control of feral ungulates have been conducted for numerous other areas, and the results of these studies are being used to determine the best method of ungulate control in suitable habitats for these species.

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'Oha wai (Clermontia peleana), Lo'ulu (Pritchardia affinis), No common name (Delissea undulata), 'Oha wai (Clermontia pyralaria), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), 'Oha wai (Clermontia lindseyana)	1	12221	Control rodents	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	Rodent control is currently only conducted within the immediate vicinity of those species which are known to be impacted by rodents, including species of the genera Cyanea, Cyrtandra, Pritchardia, and Zanthoxylum. Large-scale rodent control will not be possible until aerial pesticide application is registered for use in the state of Hawaii.

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<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	12251	Determine impacts of wildfire on taxa	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation, Research: Management Techniques	Contract, Internal Field Assistance, Internal Technical Assistance	The negative impacts of fire on Hawaiian ecosystems is now well understood, and efforts are necessary to control wildfire in any dry habitats.

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`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	13	Maintain genetic stock of each taxon ex situ	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources	Management: Propagation	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	This task is complete for Clermontia pelana and Delissea undulata under its most recent taxonomic treatment as a Big Island endemic, which are now both extinct in the wild, but for the other species in this recovery plan the existing ex situ collections are not genetically adequate.

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`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	21	Establish ecosystem history and collect diagnostic data on associated ecosystem components	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Habitat Requirements, Research: Habitat Status	Contract, Graduate Student, Internal Field Assistance, Species Expert	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan. Additional studies are needed to develop more precise microclimate needs for each species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	22	Define habitat requirements for each taxon	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Other: Regulations, Research: Habitat Requirements, Research: Habitat Status	Contract, Graduate Student, Internal Administrative, Internal Technical Assistance, Species Expert	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan, but needs to be refined for each species and its full recovery needs.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	23	Determine population characteristics for each taxon	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoctrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	2	24	Determine the reproductive potential of each taxon	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Genetics, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoctrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	251	Study pollen and seed formation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Habitat Requirements, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	252	Study pollination ecology	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Migration, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoctrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	2	253	Study germination and seedling establishment	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	<p>Research: Competition, Research: Demographic Studies, Research: Disease, Research: Environmental Contaminants, Research: Genetics, Research: Habitat Requirements, Research: Management Techniques, Research: Migration, Research: Other Information, Research: Predation, Research: Propagation, Research: Reintroduction, Research: Taxonomic Studies</p>	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothoestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	2	31	Identify populations for augmentation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, Ola‘a Kilauea Management Group	Acquisition: General, Management: Planning	Contract, Graduate Student, Internal Field Assistance, Species Expert	Any population of a short-lived perennial with fewer than 50 mature individuals and a long-lived perennial with fewer than 25 mature individuals that do not exhibit increased reproduction after the major threats are managed is considered for augmentation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	32	Propagate material for augmentation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture, U.S. Department of Defense, National Park Service, U.S. Fish and Wildlife Service, Refuge Division, Ola'a Kilauea Management Group	Management: Propagation, Management: Reintroduction	Contract, Internal Technical Assistance, Volunteer	Volcano Rare Plant Facility propagates many species for augmentation by NPS, OKMG, DLNR, and various private landowners with grants from ES or DLNR. NWR and DOD have their own facilities to propagation material for augmentation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	33	Prepare sites and augment wild populations	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, U.S. Fish and Wildlife Service, Refuge Division, Ola`a Kilauea Management Group	Management: Disease Control, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control, Management: Reintroduction	Contract, Internal Field Assistance, Volunteer	Augmentations are occurring for some species on NPS, NWR, OKMG, DLNR, and various private landowners lands, and are planned on DOD lands.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	34	Maintain, monitor and evaluate outplantings	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Disease Control, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control, Management: Reintroduction, Research: Management Techniques, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	This is an ongoing action, as the status of the species and their threats change constantly, and is currently not occurring as frequently as it should - at least once a year.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	3	41	Select new population sites, and obtain approval and long-term protection for site	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Acquisition: General, Management: Planning	Internal Administrative, Internal Technical Assistance, Species Expert	Sites have been selected on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	3	42	Control threats to plants at new sites	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Disease Control, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	Threat control is occurring on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	3	43	Transplant selected material	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, U.S. Fish and Wildlife Service, Refuge Division, Ola‘a Kilauea Management Group	Management: Reintroduction	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	Reintroductions are occurring for several species on NPS, NWR, OKMG, DLNR, and various private landowners lands and are planned on DOD lands. However, more reintroductions are needed to recover most of the species in this plan.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	44	Maintain, monitor and evaluate new populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Habitat Maintenance and Manipulation, Management: Planning, Management: Predator and Competitor Control, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	This task is ongoing whenever new populations are located.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>ʻOha wai (Clermontia peleana), Poʻe (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Loʻulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ʻOha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), ʻAiea (Nothoctrum breviflorum), Haʻiwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), Aʻe (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ʻOha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Haʻiwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	3	51	Validate the number of individuals and populations necessary for recovery of each taxon.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>ʻOha wai (Clermontia peleana), Poʻe (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Loʻulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ʻOha wai (Clermontia pyrrularia), Kula wahine noho (Isodendron pyrifolium), ʻAiea (Nothocestrum breviflorum), Haʻiwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), Aʻe (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ʻOha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Haʻiwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	3	52	Refine/revise downlisting and delisting criteria, as necessary	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning, Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys	Contract, Internal Technical Assistance, Species Expert	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	3	53	Evaluate species for downlisting and delisting	Partially Complete	FY 2005	FY 2017	U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning, Other: Regulations, Research: Demographic Studies, Research: Genetics, Research: Habitat Requirements, Research: Habitat Status, Research: Management Techniques, Research: Population Surveys, Research: Reintroduction	Internal Technical Assistance, Species Expert	Silene hawaiiensis has been assessed as part of the 5-year review initiated in 2009, as the Army has requested it to be delisted. Additional surveys are needed to assess the status and management level of the species.